Fermi National Accelerator Laboratory



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Nigel S. Lockyer Director

Directorate

P.O. Box 500, MS 105 Kirk Road and Pine Street Batavia, Illinois 60510-5011 USA

Office: 630.840.3211 lockyer@fnal.gov

Hon'ble Hung-Duen Yang Minister, Ministry of Science and Technology 106, Sec. 2, Heping E. Rd., Taipei 10622 Taiwan, R.O.C.

Dear Hon'ble Minister,

Congressman Randy Hultgren informed me of his upcoming trip to Taiwan and inquired on our nations' longstanding and potential scientific collaboration through Fermilab. Fermilab is America's Particle Physics and Accelerator Laboratory and is located within the Congressman's district, near Chicago. Fermilab and Taiwan have a long history of collaborating in particle physics and associated technologies. A few examples include:

- Fermilab and Taiwan universities collaborated on a major discovery in particle physics, the top quark, in 1995, nature's heaviest known fundamental particle. Fermilab has been actively collaborating on particle physics since that period.
- 2) Cloud computing: Fermilab participates in the yearly "International Symposium on Grids and cloud computing" hosted by Academia Sinica in Taipei.
- 3) Fermilab engineers, along with partners around the world, are designing pixel detectors (integrated circuits) for the CERN Large Hadron Collider experiment CMS in the TSMC (Taiwan Semiconductor Manufacturing Corporation) process.
- 4) Fermilab's new major international initiative in neutrino physics, called the DUNE experiment, is designing integrated circuits operating at cryogenic temperature to send the data for distribution around the world using the TSMC process.
- 5) Taiwan processes data from the Large Hadron Collider experiment "CMS" which Fermilab leads in the US. Over 1000 scientists across the US university system benefit.
- Academia Sinica scientists and students collaborate on present experiments at Fermilab.

We would like to extend an invitation for you to visit Fermilab during a future visit to the U.S.A. On a personal note, one of my former graduate students is a professor at National Central University, Shin-Shan Yu, and recently presented at a major conference here in Chicago.

Sincerely,

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Nigel S. Lockyer Director of Fermilab